

Slips, Trips, and Falls Awareness Training

**Presented By
CNO Fall Protection Working Group
Basil Tominna, P.E., Chairman**

1 May 2006



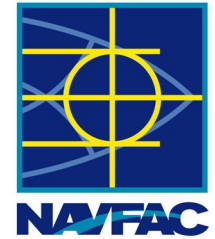
Introduction



- **Slips, trips and falls are the leading cause of work related injuries and fatalities**
- **Approximately three workers are fatally injured every work day in the U.S.**
- **Over 300,000 fall injuries annually**
- **Falls account for 12 % of all fatalities at work places**



CONUS Fatal Occupational Injuries (Bureau of Labor Statistics)



<u>Type of Exposure</u>	<u>2003</u>	<u>2004</u>
1. Transportation incidents	2364	2460
2. Contact w/objects & equipment	913	1004
3. Falls	696	815
4. Assaults & violent acts	902	795
5. Exposure to harmful substances	486	459
6. Fires and explosion	198	159



All Types of Fall Mishaps in Navy FY02, FY03 & First Six Months FY04*



✓ Same level falls or falls thru walkways and other surfaces -----	3,529
✓ Falls to lower level -----	831
✓ Falls down stairs -----	462
✓ Falls from/onto equipment, structures, or objects -----	419
✓ Walking w/out incident but injured --	207
✓ Falls from ladders -----	197
✓ Falls from moving and non- moving vehicles -----	144
✓ Falls on/from ship or boat -----	<u>47</u>
Total	5,836

* Note: Data source is the Naval Safety Center



Applicable Regulations/ Standards



➤ Navy personnel comply with:

- ✓ OPNAVINST 5100.23G, Navy Safety & Occupational Health Program Manual
- ✓ 29 CFR 1960, Basic Program Elements for Federal Employees OSH Programs
- ✓ 29 CFR PART 1910 - Occupational Safety and Health Standards - General Industry
- ✓ 29 CFR PART 1915 - Occupational Safety and Health Standards for Shipyard Employment
- ✓ 29 CFR 1904 - Recording and Reporting Occupational Injuries and Illnesses



Applicable Regulations Standards



Construction contractors shall comply with:

- ✓ 29 CFR 1926.500 (Subpart M) -- FP in Construction
- ✓ UFGS Section 01525, Safety & Health Requirements
- ✓ American National Standard Institute -
 - ANSI Z359.1- Safety requirements for personal fall arrest systems, subsystems and components
 - ANSI A10.32 - Fall protection systems for construction and demolition operations



Applicable ANSI Fall

Protection Standards



➤ General Industry Standards:

- ✓ ANSI A1264.1: Safety Requirements for Workplace Floor and Wall Openings, Stairs and Railing Systems
- ✓ ANSI Z359.1: Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

➤ Construction Standards:

- ✓ ANSI A10.32 Personal Fall Protection Used in Construction and Demolition



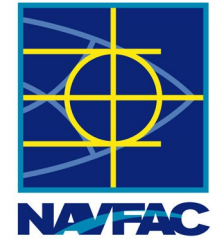
Fall Related Hazards



- Working/Walking On, Close, or Near:
 - ✓ Wet and slippery surfaces
 - ✓ Unprotected sides or edges
 - ✓ Ladders and stairways
 - ✓ Roof or floor openings, holes, hatches, and skylights
 - ✓ Unstable surfaces
 - ✓ Scaffolds and work platforms
 - ✓ Dangerous equipment



Types of Falls



- Same level falls:
 - ✓ Slips and trips that lead to a fall (on the same working/walking surface or falling a few feet)
- Falls on stairs or steps
- Falls from elevation (more than 4 ft)
- Holistic falls (seniors older than 65 years)



Same Level Falls



➤ Slips:

- ✓ Occur when there is little or not enough friction or traction between footwear and walking/working surface
 - According to OSHA, Coefficient of Friction shall be more than 0.5 (Coefficient of Friction is a measure of slip resistance)

➤ Trips:

- ✓ Tripping is a loss of balance due to contacting an object or obstruction



Slips



➤ Causes:

- ✓ Wet or slippery floors
- ✓ Spills - motor oil, water
- ✓ Loose or unanchored/unattached rugs, mats, or carpets
- ✓ Flooring that does not have same degree of traction in all areas
- ✓ Type of footwear or worn shoe soles
- ✓ Weather hazards - ice or snow



Trips



➤ **Causes:**

- ✓ **Poor housekeeping**
- ✓ **Obstructed view or obstacle on walkways**
- ✓ **Poor lighting, illumination**
- ✓ **Uneven walking/working surfaces (uneven steps, threshold, obscured holes or objects)**
- ✓ **Individual behavior**



Possible Solutions for Same Level Fall Hazards



- Good housekeeping always helps prevent slips, trips, and falls:
 - ✓ Keep floors clean and dry
 - ✓ Provide warning signs for wet floor areas
 - ✓ Where wet processes are used
 - Maintain proper drainage
 - Provide false floor, mats, or other dry standing places where practical, or
 - Provide appropriate waterproof footwear
 - ✓ Keep all workplaces clean and orderly
 - ✓ Keep aisles/passageways clear of obstructions that could create a tripping hazard



Other Recommended Work Practices to Prevent Same Level Fall Hazards



- ✓ Access to exits must remain clear of obstructions at all times
- ✓ Ensure spills are reported and cleaned up immediately
- ✓ Use no-skid waxes and surfaces coated w/grit to create no-slip surfaces in areas such as restrooms and showers
- ✓ Use waterproof footwear to decrease slip/fall hazards



Other Recommended Work Practices (Continued)



- ✓ Use only properly maintained ladders to reach items
- ✓ Do not use stools, chairs, or boxes as substitutes for ladders
- ✓ Provide floor plugs for equipment so that power cords need not run across pathways and become tripping hazards
- ✓ Temporary electrical cords that cross aisles should be anchored to the floor



Other Recommended Work Practices (Continued)



- ✓ Stretch carpets that bulge to prevent tripping hazards
- ✓ Aisles and passageways should be sufficiently wide for easy movement and be kept clear at all times
- ✓ Eliminate cluttered or obstructed work areas
- ✓ Use prudent housekeeping procedures such as cleaning only one side of a passageway at a time



Other Recommended Work Practices (Continued)



- ✓ **Countertops should be free of sharp corners**
- ✓ **Provide sufficient lighting for all halls and stairwells**
- ✓ **Provide adequate lighting especially during night hours, or use flash lights or low level lighting when entering dark areas**
- ✓ **Eliminate uneven floor surfaces**
- ✓ **Promote safe work in cramped working spaces**



Other Recommended Work Practices (Continued)



- ✓ Avoid awkward positions and use equipment that makes lifting of bulky loads less awkward
- ✓ In cold regions remove the snow as soon as possible
- ✓ On snowy days, if climbing equipment or other structures use proper footwear to prevent slipping



Falls on Stairs



➤ Causes:

- ✓ **Bad stair design**
- ✓ **Uneven surface or steps**
- ✓ **Loose or no handrails or stair rails**
- ✓ **Insufficient lighting or illumination**
- ✓ **Individual behavior**
- ✓ **Work task**



Falls on Stairs Possible Solutions



- ✓ Design stair steps with equal rise and equal tread
- ✓ Make edge of steps visible
- ✓ Keep steps free of grease, oil, and obstacles
- ✓ Do not carry heavy or bulky objects that obscure vision or require use of both hands
- ✓ Use handrails on stairs, avoid undue speed, and maintain an unobstructed view of the stairs ahead



Ladder Safety

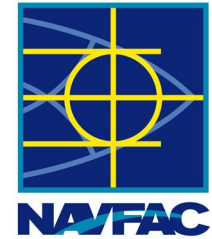


➤ Portable ladder safety:

- ✓ Inspect ladders frequently
- ✓ Ladder pitch - 1 horizontal to 4 vertical
- ✓ Place ladder so as to prevent slipping (tie the ladder)
- ✓ Only one person at a time uses ladder
- ✓ When gaining access, extend ladder three feet above the roof
- ✓ Perform only light work



Falls from Heights



➤ **Requirements:** Each employee on a walking working surface with unprotected side or edge, shall be protected from falling to a lower level by the use of **guardrails, safety nets, personal fall arrest systems, or the equivalent**

✓ OPNAVINST 5100.23G -----	4 ft
✓ 29 CFR 1910 General Industry -----	4 ft
✓ 29 CFR 1915 Shipyards -----	5 ft
✓ 29 CFR 1926 Construction Standards -----	6 ft
✓ USACE EM 385 Manual -----	6 ft



Fall Protection Systems



Fall Protection Systems



- **Guard rails**
- **Safety nets**
- **Personal fall arrest systems**
- **Other fall protection systems**



Other Fall Protection Systems



- Horizontal and vertical lifelines
- Ladder climbing devices
- Work positioning and travel restraint systems
- Warning line systems
- Aerial lift equipment/work platforms
- Raising/lowering devices
- Covers
- Monitoring systems
- Fall protection plans
- Controlled access zones